4 Channels Stand-Alone Digital Video Recorder

User Manual

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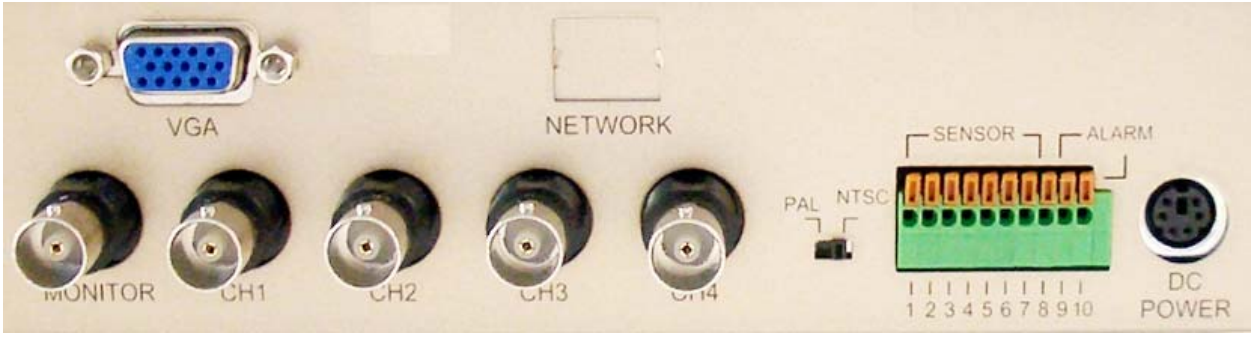
1. DVR Feature

- 4 Channel BNC Camera Input
- 1 Channel BNC Monitor Output
- NTSC / PAL
- 4 Sets NO/NC Sensor Input
- 1 Relay Output (2A 28VDC / 0.5A 125 VAC)
- One ATA-100 Hard Disk Interface, Support Over 200G Byte
- Built-In Motion Detection
- Time Schedule Record, Sensor Triggered Record
- USB 2.0 Interface & PC Backup Software
- VGA D-SUB 1024*768 Output (Optional)
- Network Interface (Optional)
- Infrared Remote Controller (Optional)
- 2 Channel Audio Record (Optional)

2. Outlook

2.1. Front Panel

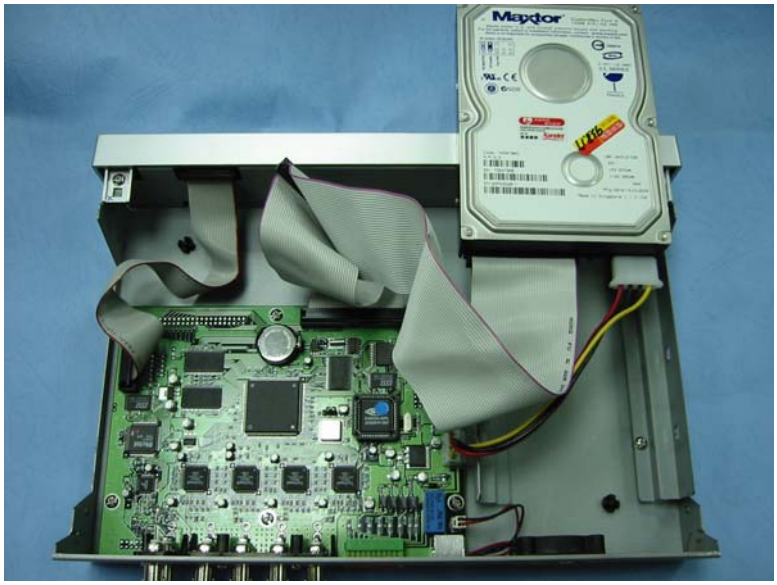
2.2. Rear Panel



3. DVR Installation

3.1. Install Hard Disk

Connect power cord and data cable to hard disk, use screw to fix hard disk with the iron of DVR housing.

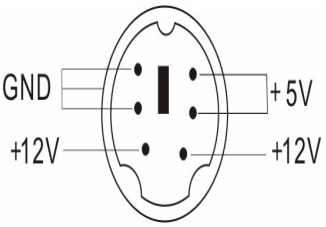


3.2. Connect Camera and Monitor

- There are 4 camera input and 1 monitor output with BNC connector.
- D-SUB VGA Output can support CRT and LCD Monitor, please adjust brightness and contrast of monitor for best output.

3.3. Connect Power Cord

Please use power adapter come along with DVR.



4. DVR System Boot

4.1. Detect installed Hard Disk

After connect the power, system will boot -up and detect installed hard disk. Monitor will show Master and Slave hard disk information. Please reference hard disk manual to configure hard disk sequence. (Master or SLAVE)

```
HDD Checking.....
        HARD DISK 1
            IBM-DHEA-36481
        HARD DISK 2
            NO DETECTED
```

4.2. Recover Lost Data

Power-Error will cause data lost and system will ask for recover data at next boot-up process, please press 「↵ Select」to proceed.

```
SLAVE : RECOVER HDD? 040811-101735
(SELECT) YES / (MENU) NO
```

4.3. Restore Recording Process

When power-error happened during recording process, system will automatically restore recording process after power re-connected.

```
POWER ERROR DETECHED
RESTORE HARD DISK(MASTER) OK
RESTORE REC MODE..... OK
```

4.4. Main Screen

At first time DVR boot-up, all cameras live view are OFF, please follow chapter 5-2 to switch all cameras on.

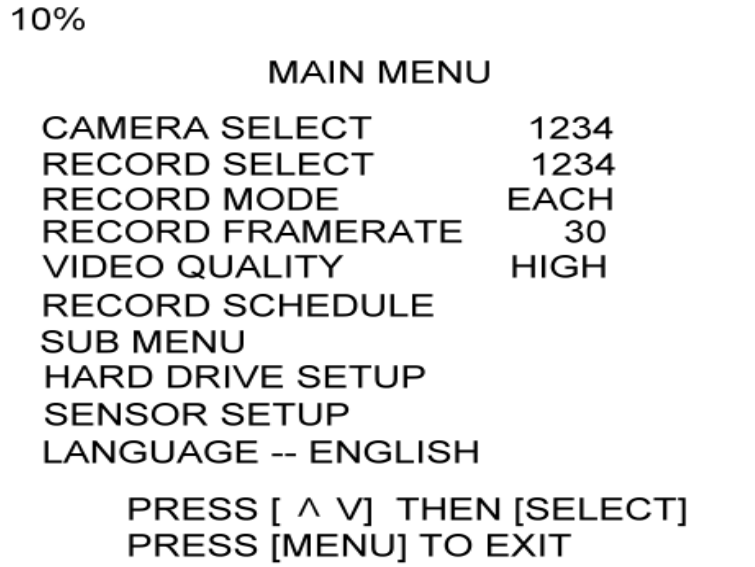
- Upper left → Ratio of Hard Disk Space Used
- Middle →Channel Name(CH1 ～ CH4)
- Bottom right →Date and Time

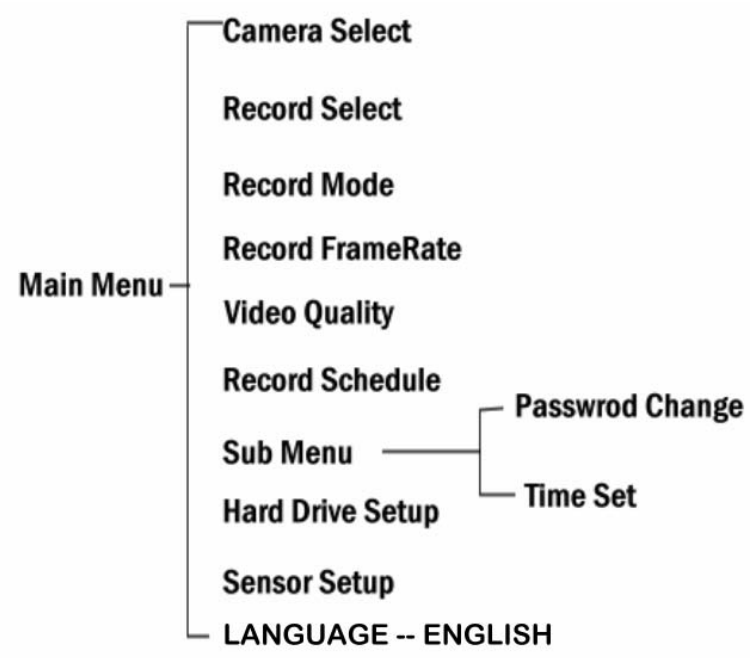
At the moment, DVR is waiting for command, press「 Menu」 into DVR setup process or 「 Play」,「 Record」.

5. DVR Setup

5.1. Setup Menu

Press「 Menu」into setup menu, use 「 Up」 and 「 Down」 to select item, press 「 Select」to modify setting and 「 Menu」 to cancel input and exit.





5.2. Camera Select

System can display 4 camera live video in one screen (Quad Mode). User can configure each cameras to display or not display. For example, 1234 will display all 4 cameras live video.

Press「↵ Select」to modify setting and press 「CH1」,「CH2」,「CH3」, 「CH4」 to set each channel separately. If channel are not switch on then system will display as [OFF] on monitor.

5.3. Record Select

Configure which channel is allowed to record.

5.4. Record Mode

There are two modes for video recording,

「Each Mode」: Compress and record each video channel separately therefore user can enlarge single channel video to full screen display. For example, use can turn off record function of CH-1 and CH-2 and then system only record CH3 and CH4 video.

Press「CH1」,「CH2」,「CH3」,「CH4」to switch channel display when playback recorded video.

「Quad Mode」: Compress and record all 4 channel video into one file, therefore use can not enlarge single channel to full screen.

5.5. Record Frame Rate

Record frame rate will affect the movement of object in recorded video. More frames means more smooth movement and spend more hard disk space. System default value is 30 fps, it means system will record 30 frame per second. User can configure frame rate as 30, 15, 10,7,5,4,3,2,1 frames per second.

5.6. Record Quality

There are there level of record quality, High, Normal, Low, higher quality spend more hard disk space.

Record frame rate, record quality and hard disk space will affect total record time of DVR system.

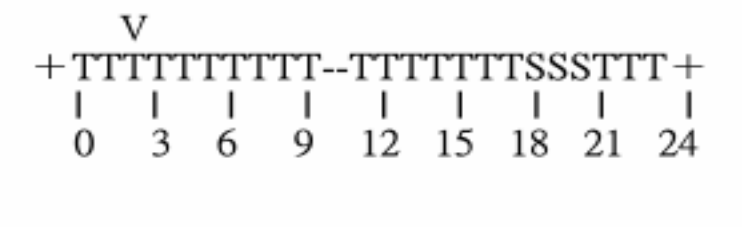
5.7. Record Schedule

User can define video record method by hour.

- 「－」 No Record
- 「**T**」 Continue, (System Default)
- 「**S**」 Sensor Triggered or Motion Detect Triggered
  DVR can cooperate with many kinds of external sensor equipment like PIR, Gas sensor. DVR will not record video until external sensor was triggered and output signal to notify DVR during this specified period of time.

  Motion Detect means DVR will continuously compare camera video and detect the change. When some object across the camera, system will triggered and automatically start record and turn the alarm on.

  Please refer Chapter 5.11 for more detail setting.



「**T**」→ Continue 「**S**」Sensor Triggered 「－」No Record
「▲ Up」 「▼ Down」, 「↵ Select」Method

5.8. Sub Menu－Password

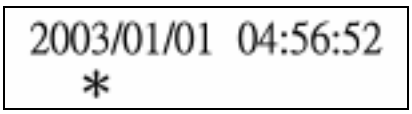
Default password：Press six times of 「CH1」key

All keys can use as password key except 「Menu」key is use for cancel input and exit.

CURRENT PASSWORD : ------
NEW PASSWORD : ------
CONFIRM PASSWORD : ------

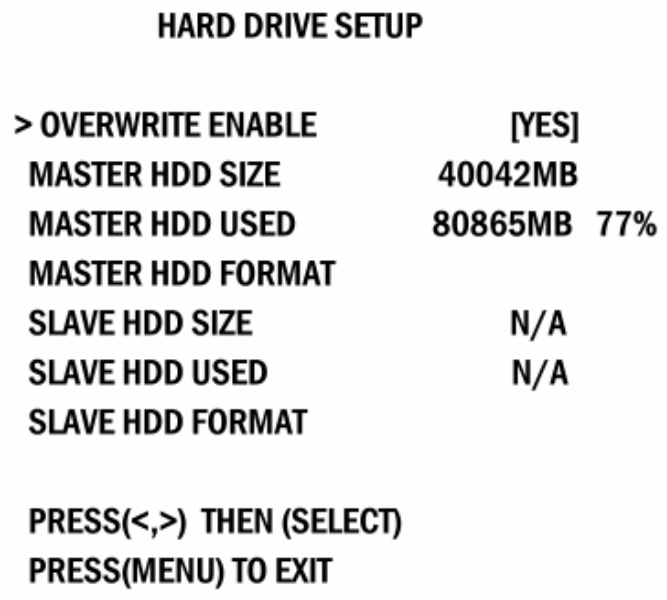
5.9. Sub Menu－Time

Configure DVR system time. Press「▲ Move Up」 and 「▼ Move Down」 to select digit and press「↵ Select」to modify. Press「Menu」to finish input and exit.



5.10. Hard Drive Setup

- OVERWRITE ENABLED
  If you choose YES, recording continues and overwrite previous recording when hard disk drive space is full.
  If you choose NO, the recording session stops when all hard disk drive is full for recording.
- MASTER HDD SIZE
  It shows the size of the primary hard disk drive installed in the DVR.
- MASTER HDD USED
  It shows the space used on the first hard disk drive for recording.
- MASTER HDD FORMAT
  If you format the hard drive, it will erase all the data recorded on the first hard disk drive.
- SLAVE HDD SIZE
  It shows the space the secondary hard disk drive installed in the DVR.
- SLAVE HDD USED
  It shows the space used on the primary hard disk drive for recording.
- SLAVE HDD FORMAT
  If you format the hard drive, it will erase all the data recorded on the secondary hard disk drive.

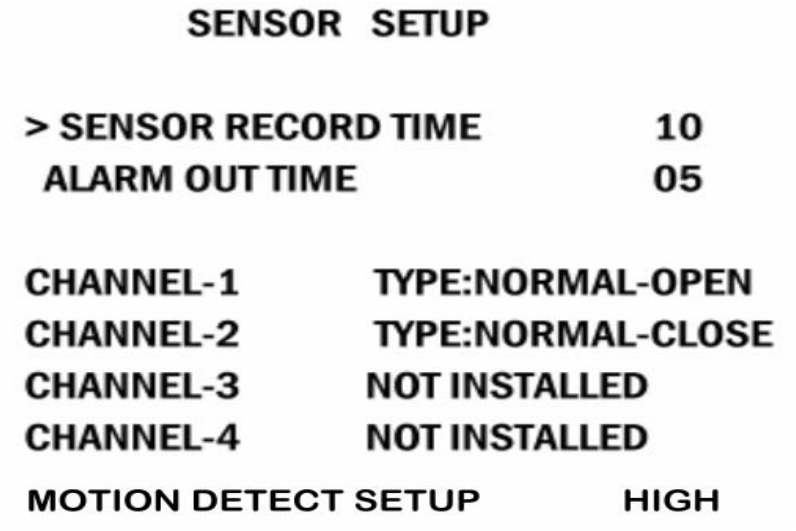


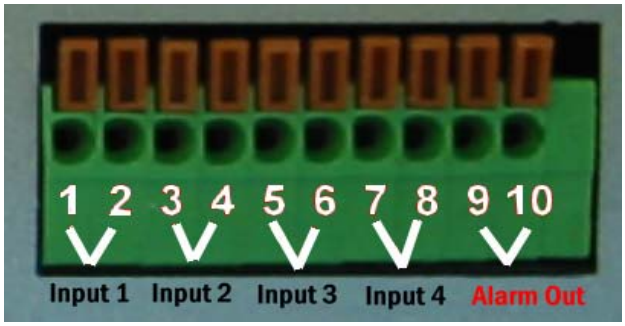
5.11. Sensor Setup

- SENSOR RECORD TIME
  The number indicates how long sensor recording lasts after when the sensor indicates the movements in front of the camera.
- ALARM OUT TIME
  It controls how long (in seconds) the alarm lasts after it sets off. Value 0 will turn off alarm output.
  Select Cont will turn on alarm output until user press any key.
- There are 3 different modes for sensor setting:
  NOT INSTALLED,
  NORMAL-CLOSE (NC) and NORMAL-OPEN (NO).

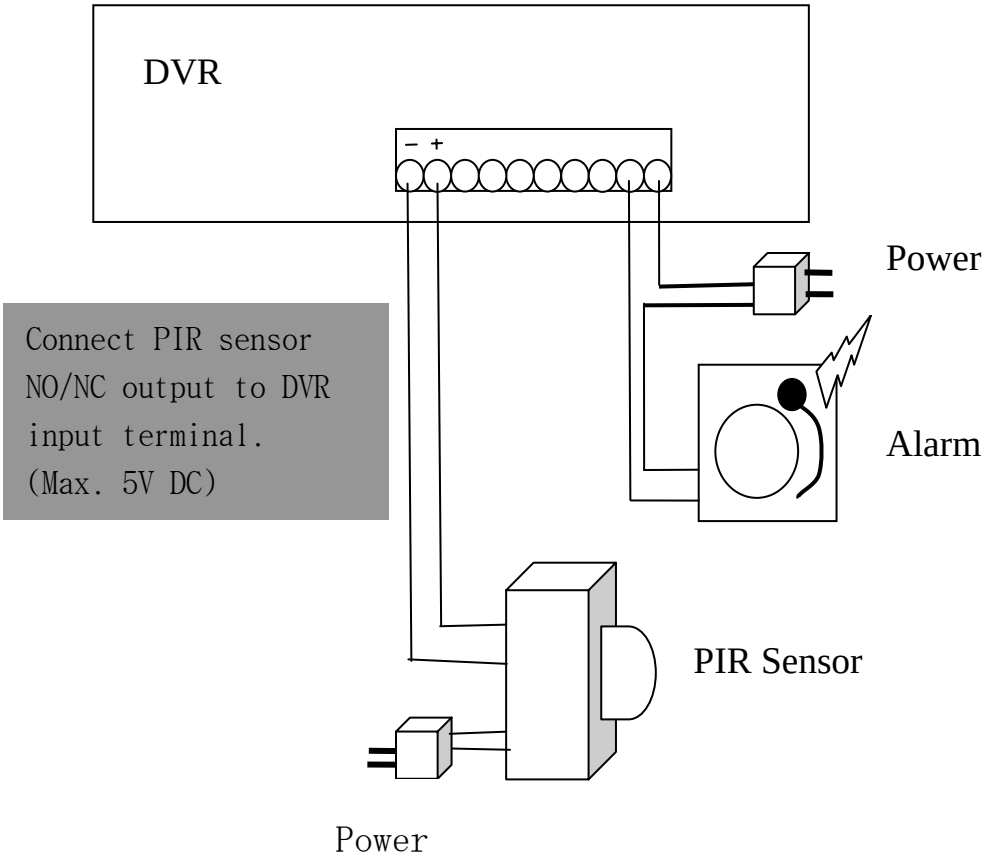
  It depend on what type external sensor you use, if sensor's output is NORMAL-OPEN then select NORMAL-OPEN mode in DVR.

  If sensor triggered by an intruder then the cable line connects to DVR input terminal will notify system to start recording.
- MOTION DETECT SETUP
  There are 3 level of sensitivity, HIGH, MID, LOW.
  Each Channel must configure as NC or NO mode when use motion detect. If user doesn't have any sensor connected please configure as Normal-Open mode. Sensor Record Time can't configure as 0.





Example diagram :



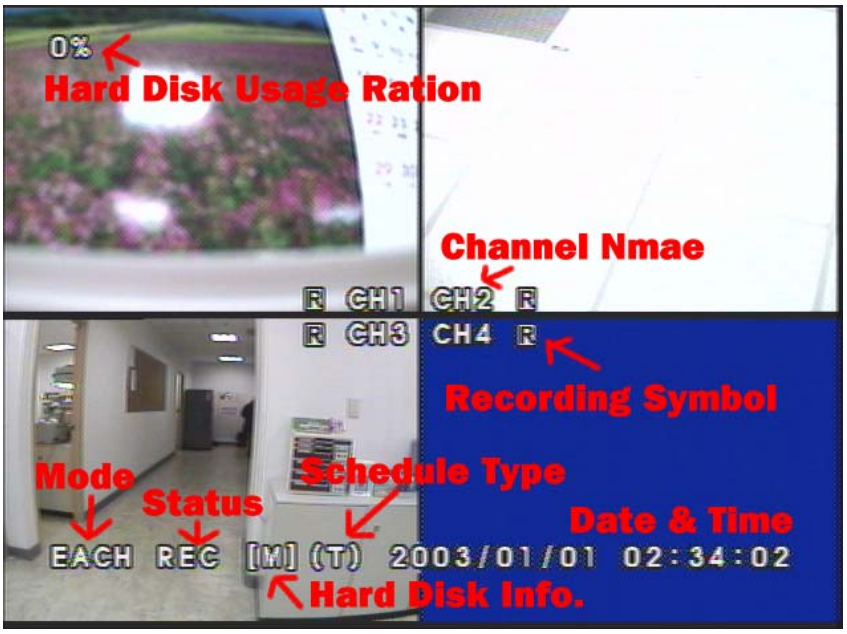
5.12. NTSC/PAL Output Select

There is a switch at real panel of DVR.

6. Record

6.1. Start Recording

Press 「● Record」 to start record. System will display some information on Screen.



- Name →CH1 ~ CH4, R Indicate recording now
- Mode →QUAD or EACH
  Only E A C H MODE can enlarge single channel to full screen display
- Status →REC, Play, FF1, FF2, FF3, REW, PAUSE
- HD Info.→[1] Master disk [2] Slave disk
- Schedule→(T) Continuous (S) Sensor (－) No Record

When 「＊」 show up beside date & time , it indicate that system are overwrite the Hard Disk.

6.2. Stop Recording

Press 「■ Stop」 and system will prompt to input password. Only correct password can stop recording process.

6.3. Recording Length

User can calculate estimate record hours by below formula

120G Byte @ 7 frames per second @ Normal quality

$$\frac{120\text{ (G byte)} \times 1024\text{ (M byte)} \times 1024\text{ (K byte)}}{15\text{ (Kbyte/frame)} \times 7\text{ (frame/sec)} \times 60\text{ (sec)} \times 60\text{ (min)}}$$

Estimate hours is 332 Hours

Estimate record time base on 120G Byte HD(Quad Mode)

Format	Quality	KByte \ fps	30	15	7	1
NTSC	HIGH	20	58	117	250	1748
	NORMAL	15	78	155	333	2330
	LOW	12	97	194	416	2913

Format	Quality	KByte \ fps	25	12	6	1
PAL	HIGH	20	70	146	291	1748
	NORMAL	15	93	194	388	2330
	LOW	12	117	243	485	2913

Unit: Hour

It take 5~20 Kbytes hard disk space for each frame after compression, all numbers in this table just for reference only.

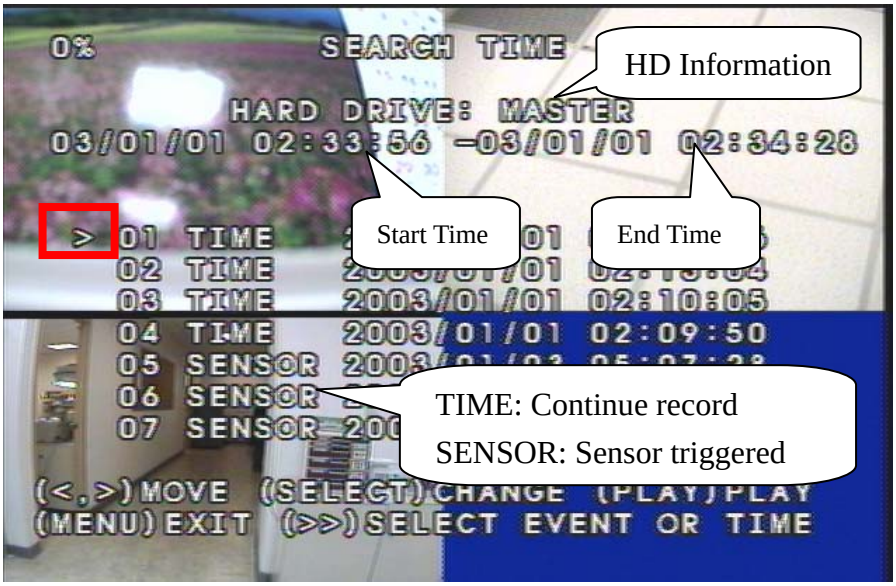
7. Playback

Press 「▶ Play」then system will list all event of recorded video clip from HD. Newest video will at top of the list.

There are two ways to search record video clip

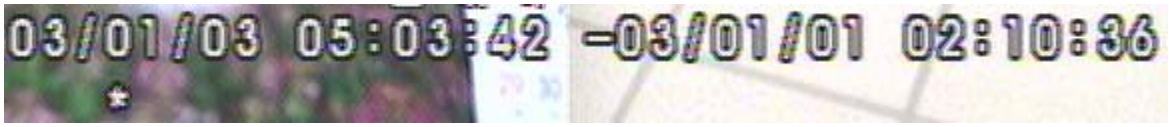
■ Event List

Press「▲ Move Up」 and 「▼ Move Down」to select event and press 「▶ Play」again to start play video to the end.



■ Time Input

Directly input time period. Press 「▶▶ Forward」 then cursor will move to time string. Press 「▲ Move Up」 and 「▼ Move Down」 to select digit and press 「↵ Select」to edit time value. Finally press 「▶ Play」to play video.



8. Backup Video to PC via USB

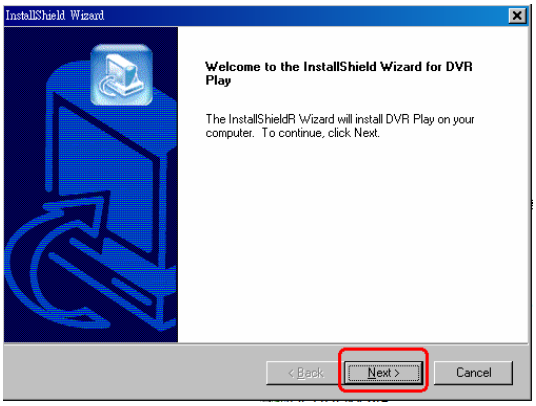
DVR provide USB 2.0 interface and backup software to backup video clip and store in PC. Backup software can convert DVR video into PC .avi format and user can backup these video to CD-R or DVD.

Do not connect DVR cable to PC while DVR is recording or playing

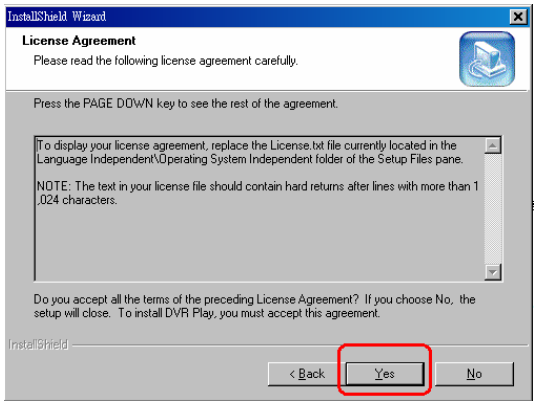
If DVR has error please reset

8.1. Install DVR Play software

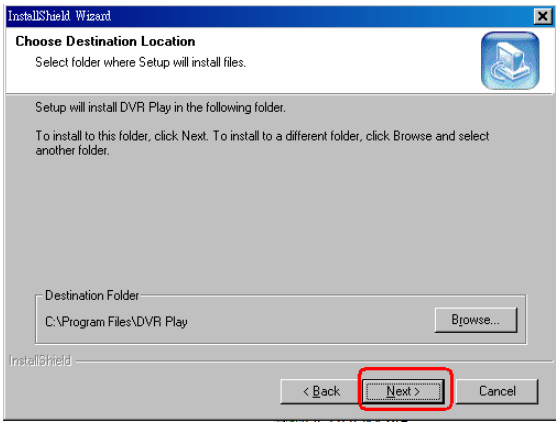
Put CD into CD-ROM driver and open [my computer]→[CD driver]
Execute [Setup.exe] and follow the installation procedure:


InstallShield Wizard
Welcome to the InstallShield Wizard for DVR Play
The InstallShieldR Wizard will install DVR Play on your computer. To continue, click Next.
< Back
Next >
Cancel

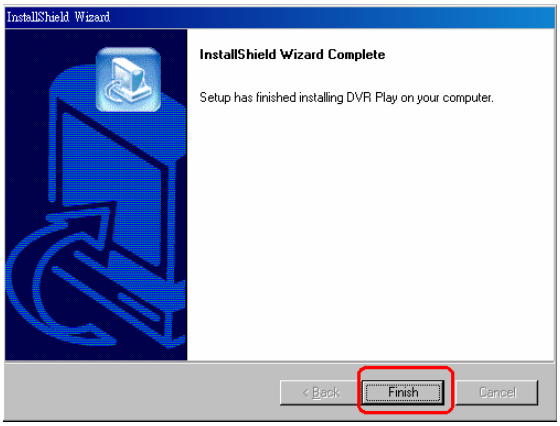
Click [Next]


InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
To display your license agreement, replace the License.txt file currently located in the Language Independent\Operating System Independent folder of the Setup Files pane.
NOTE: The text in your license file should contain hard returns after lines with more than 1,024 characters.
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install DVR Play, you must accept this agreement.
InstallShield
< Back
Yes
No

Click [Yes]


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install DVR Play in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\DVR Play
Browse...
InstallShield
< Back
Next >
Cancel

Select folder to install and Click [Next]



Install complete

8.2. Stop recording or playing before connect to PC

Do not connect DVR cable to PC while DVR is recording or playing

Please make sure DVR into [Menu] mode.

Press [Menu] key first and check HDD LED is not blinking in front panel!!

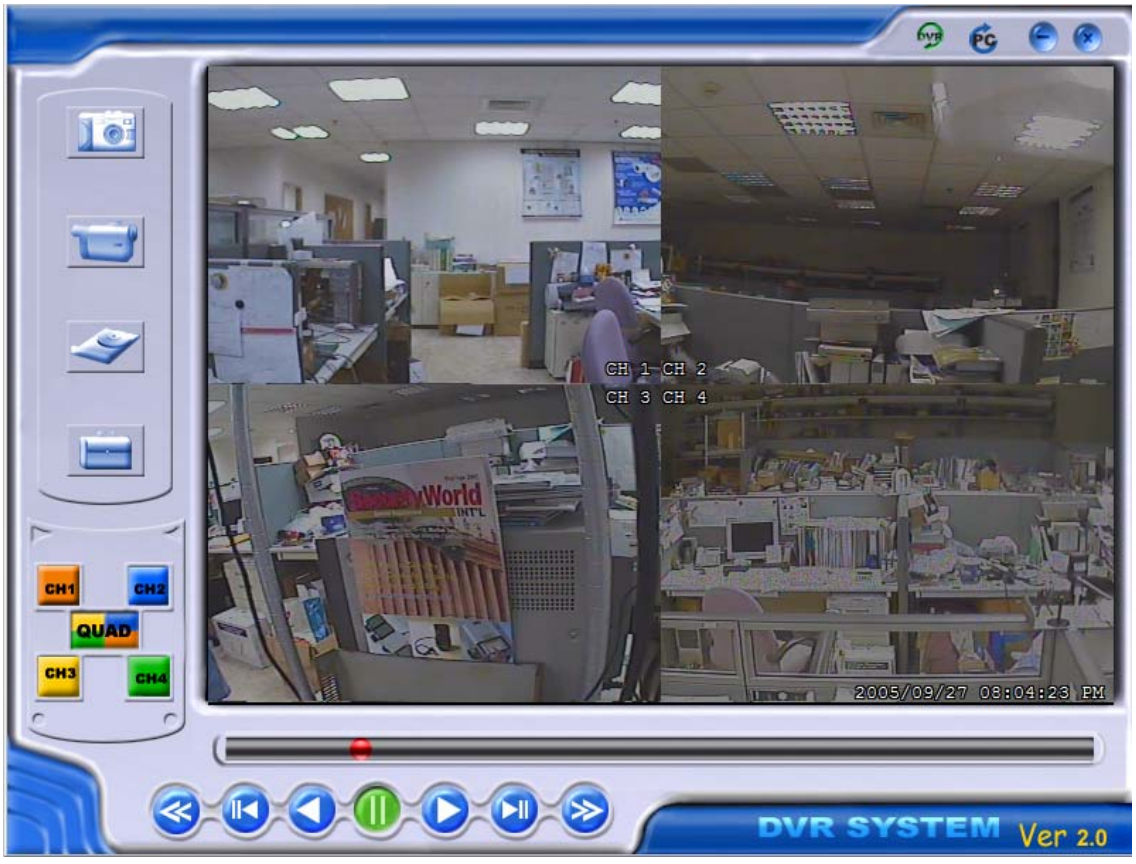
8.3. Connect DVR to PC via USB cable

Connect DVR to PC via USB cable and operating system will automatically identify new hardware and install driver at first time. (Windows XP/2000/ME)
The hard drive in DVR system is not compatible with PC. Therefore windows system can't not recognize the hard drive installed in DVR. Only [DVR Play] software can read video data from DVR.

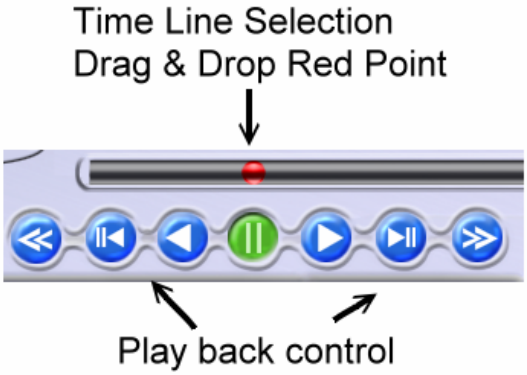
8.4. Execute [DVR Play] software

Click [Start]→[DVR Play] → DVR Play

Fist, software will searching hard drive connected via USB hard driver. It will spend about 2 ~ 4 minutes. If software identifies the hard drive in USB interface then it will start to read video data. If there is no hard drive detected then software will display warning message. Please make sure DVR in [Menu] mode and re-connect USB cable and open software again..



Main Screen of DVR Play



Save Frame : Save single .JPG or .BMP picture

Save Video Clip : There two format to select

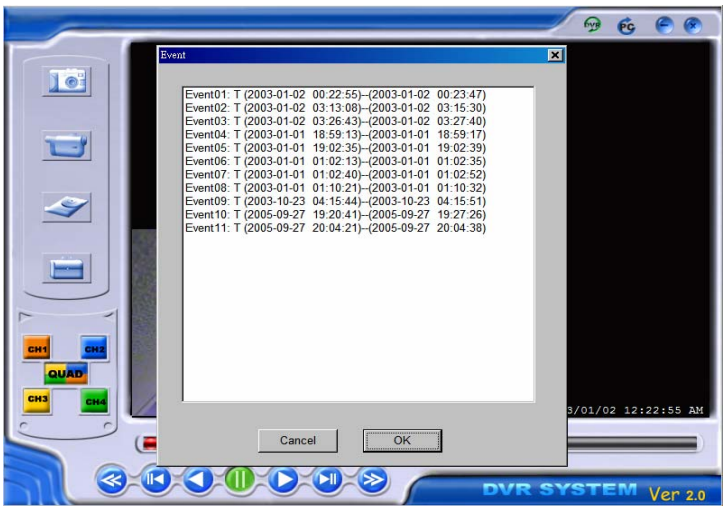
MYS : Proprietary format, Only DVR Play can paly .mys file

AVI : Windows standard format and there are many compression codec and select. Different compress codec result in different file size, default is [not compress] and spends a lot of disk space.

We recommend user select AVI format because most computer support AVI file playback. So user can burn video in CD-R and play back video in any computer easily.

Config : pre-define folder to save picture or .mys files

Event List : List all event with time information, user can quickly jump to specific time.



8.5. How to save video clip

Step1: Select Event or Play video to the start of the video.

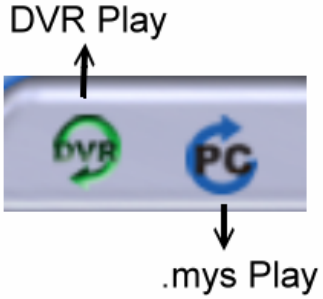
Step2: Click [Save Video Clip] Key , system will prompt to ask the folder name and file name of the video clip. Select [avi] format in file type.

Step3: Select compress method. Please select [uncompress] for the best quality and compatibility.

Step4: After step 3, DVR Play will continue play the video and save video data to computer. System will stop at the end of event but user can click key again to stop capture immediately.

8.6. Play .mys file

User needs [DVR Play] software to play .mys file. Click [PC] icon in top-right of the windows and select files to play.
Click [DVR] icon switch to DVR mode.



9. Other way to connect Hard Driver

User can put DVR's hard driver into a removable hard driver rack or directly connect to PC's IDE cable. Power on the PC and execute DVR Play software to backup video data.

10. Password Reset

Open DVR case and take the battery out. After 5 minutes put it back to DVR and then all setting will reset to default.

Default password is [PRESS Ch1 Six times]

11. Specification

ITEM			DESCRIPTION	NOTE
Video Format			NTSC / PAL	
Camera Input Channel			4 channel Composite BNC	
Monitor Output Channel			1 channel Composite BNC	
VGA Output (optional)			D-SUB 1024 * 768	CRT OR LCD
Display Frame Rate		NTSC	120 fields/second	4 x 30 fields/second
		PAL	100 fields/second	4 x 25 fields/second
Recording Frame Rate (Quad)		NTSC	Max 30 fps (Quad)	
		PAL	Max.25 fps (Quad)	
Recording Frame Rate (Each Mode)		NTSC	Each Channel = 30 fps ÷ Number of Source	Max. 30 fields/s (Each Channel)
		PAL	Each Channel = 25 fps ÷ Number of Source	Max. 25 fields/s (Each Channel)
Record Mode			Continuous, Schedule, Sensor Trigger & Motion Detect	
Resolution	Display		NTSC：720 x 480 PAL：720 x 576	
	Record		NTSC：320 x 112, 640 x 224 PAL：320 x 136, 640 x 272	Quad：640 x 224 (total) Each：640 x 224
Video Compression Format (Each Channel)			Modified M-JPEG (12-20K bytes/frame)	Low :12K Byte Normal :15K Byte High : 20K Byte
HDD Support			Over 200G Byte	ATA -100 Interface
Estimated Record Length			120G Hard disk @ 7 fame per second @ Normal Quality (120*1024*1024 K byte) ÷ (7*15*60*60) = 332 Hours	
Search	Method		Time、Date、Event	
	Full Screen		YES	
Sensor, Alarm			4 Input (Normal Open / Normal Close) 1 Input (Relay 2A 28VDC / 0.5A 125VAC)	
USB			USB 2.0 Interface connect to PC & Backup Software	
Remote controller (optional)			Infrared	
Audio (optional)			2 audio channel	
Network (optional)			Web Browser (Java application) VGA & QVGA	
Operating Temperature			0 ~ 40	
Dimension			Length 315mm * Width 224mm * High 52mm	

CH1
CH2
REC
QUAD
CH3
CH4
AV/RF
PROG
CH1
CH2
CH3
CH4
PAUSE
REW
PLAY
FWD
STOP